

Le Verrier's tables of Sun and Planet, with the semi-diameters for transits recommended in the Introduction to the Tables of *Venus*, give $20^h\ 11^m\ 12^s\cdot3$.

Carlini's Sun and Lindenau's *Venus*, with addition of Airy's long inequality of *Venus* and the Earth, and our old semi-diameters (but $8''\cdot9$ for $\odot$'s Hor. Par.) give $12^h\ 57^m\ 33^s\cdot3$.

Hence the error of calculation by Le Verrier's Tables is $= -5^s$: and that by the Tables of Lindenau and Carlini, with Airy's long inequality, $= -13^m\ 34^s$.

Verulam Buildings, Gray's Inn, W.C.
1875, January 8.

Observations of Occultations of Stars by the Moon, and of Phenomena of Jupiter's Satellites, made at the Royal Observatory, Greenwich, in the year 1874.

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Occultations of Stars by the Moon.

Day of Obs.	Phenomenon.	Telescope.*	Power.	Moon's Limb.	Mean Solar Time of Observation. h m s	Observer.
1874. Jan. 25	Disapp. of 53 Arietis	Altaz.	100	Dark	11 49 27·96	L
27	„ <i>k</i> Tauri	„	„	„	10 41 7·49	E
30	„ <i>c</i> Geminorum	„	„	„	6 4 24·39	A D
Mar. 26	„ λ Cancrī	„	„	„	11 47 16·13	E
31	„ 10 Virginis	E. Eq.	140	„	8 27 13·07	C
May 19	„ <i>c</i> Geminorum	Altaz.	100	„	11 30 45·99	C
July 8	Reapp. of 53 Arietis	„	„	„	14 14 48·62	J
17	Disapp. of Piazzi xi. 12	„	„	„	8 52 54·96	C
Oct. 22	„ 27 Piscium	„	„	„	12 7 1·75	L
„	„ 29 Piscium	„	„	„	13 52 56·05	L
Nov. 19	„ 10 Ceti	„	„	„	10 47 59·22	E
Dec. 19	„ π Arietis	„	„	„	11 15 19·16	J

* The clear aperture of the object-glass of the Great Equatoreal is $12\frac{3}{4}$ inches, of the East Equatoreal 6·7 inches, and of the Altazimuth $3\frac{3}{4}$ inches.
K 2

Phenomena of Jupiter's Satellites.

Day of Obs.	Satellite.	Phenomenon.	Telescope.	Power.	Mean Solar Time of Observation.			Mean Solar Time from N. A.			Observer.
1874.					h	m	s	h	m	s	
Jan. 30	IV (a)	Ecl. disapp.	G. Eq.	130	12	27	23.0	12	32	10.0	A D
"	III (b)	"	"	285	14	39	13.3	14	34	38.9	W C
"	IV (c)	Ecl. reapp.	"	"	15	25	53.6	15	24	46.1	W C
"	III (d)	"	"	"	17	41	51.3	17	41	1.7	W C
Feb. 10	III (e)	Tr. ing. first cont.	"	"	11	23	42.5	11 29			G
"	III	" last cont.	"	"	11	30	11.5				
"	II (f)	" last cont.	"	"	18	19	6.2	18	18		A D
19	II (g)	Ecl. disapp.	E. Eq.	"	13	44	26.5	13	43	28.8	C
Mar. 18	I	Occ. reapp.	"	310	8	28	1.0	8	28		C
23	II	Occ. reap. first cont.	"	140	13	5	20.6	13	9		C
"	I	Occ. disap. first. cont.	"	"	13	29	4.5	13 30			C
"	I	" last cont.	"	"	13	31	45.3				
24	I (h)	Tr. ing. last cont.	"	"	10	42	19.1	10	43		A D
"	I (i)	Tr. egr. last cont.	"	"	13	1	7.0	12	58		A D
25	II (k)	" first cont.	"	"	10	12	43.5	10 17			L
"	II	" bisec.	"	"	10	16	0.1				
"	II	" last cont.	"	"	10	18	24.5				
"	III	" "	"	"	10	18	24.5	10	22		L
"	I (l)	Ecl. reapp.	"	"	10	21	25.6	10	21	2.5	L
31	I	Tri. ing. first cont.	"	"	12	26	12.3	12 27			C
"	I	" last cont.	"	"	12	29	41.7				
Apr. 8	I	Occ. disap. first cont.	"	"	11	18	22.7	11 24			G
"	I	" bisec.	"	"	11	20	52.2				
"	I	" last cont.	"	"	11	24	36.6				
"	II	Tr. ing. first cont.	"	"	12	7	14.6	12 8			G
"	II	" bisec.	"	"	12	9	44.2				
"	II	" last cont.	"	"	12	12	43.7				
"	III	" first cont.	"	310	13	49	57.7	13 57			G
"	III	" bisec.	"	"	13	56	11.7				
"	III	" last cont.	"	"	14	2	40.6				
"	I	Ecl. reapp.	"	140	14	8	42.6	14	8	53.8	G
16	I (m)	Tr. ing. first cont.	"	"	10	19	21.7	10 25			A D
"	I	" last cont.	"	"	10	24	12.9				
"	I (n)	Tr. egr. first cont.	"	"	12	37	53.1	12 41			A D
"	I	" last cont.	"	"	12	42	15.3				
May 1	I (o)	Occ. disap. first cont.	"	"	11	8	56.0	11 9			E
"	I	" last cont.	"	"	11	10	56.0				

Day of Obs.	Satellite.	Phenomenon.	Telescope.	Power.	Mean Solar Time of Observation.			Mean Solar Time from N.A.			Observer.
1874.					h	m	s	h	m	s	
May 1	I (p)	Ecl. reapp.	E. Eq.	140	14	20	15.4	14	20	10.8	E
2	I (q)	Tr. egr. last cont.	"	310	10	45	12.6	10	43		A D
8	I (r)	Occ. disap. first cont.	"	"	12	55	26.4	12	58		G
"	I	" bisec.	"	"	12	56	38.2				
"	I	" last cont.	"	"	12	59	0.8				
19	II	Ecl. reapp.	"	"	12	58	7.0	12	58	48.6	C
June 1	III	Ecl. disap.	"	"	10	13	5.3	10	9	47.3	A D
"	I	Tr. ing. first cont.	"	"	10	18	49.3	10	18		A D
"	I	" last cont.	"	"	10	21	18.9				
24	I (s)	Tr. ing. last cont.	"	"	10	33	4.5	10	32		A D

Notes.

- (a) The first sensible diminution of brightness was noticed 3^m 30^s before the time recorded above.
- (b) Definition not good. The first indication of obscuration was noticed 4^m 42^s before the recorded time.
- (c) The satellite did not attain its full brightness till about ten minutes after the recorded time. It was extremely faint when first noticed.
- (d) The satellite attained its full brightness about seven minutes after the recorded time. When first noted it was very faint, being overpowered by a patch of scattered light caused by moisture deposited between the lenses of the object-glass.
- (e) The observation was unsatisfactory, as *Jupiter* was blurred and ill-defined, and the satellite faint.
- (f) Satellite faint from daylight, the sky being also hazy.
- (g) The first diminution of brightness was noticed 2^m 36^s before the recorded time. The observation is not a good one, the satellite being very faint, owing to a thick fog.
- (h) The image of *Jupiter* was diffused, and the observation was, in consequence, not satisfactory.
- (i) The planet was occasionally obscured by cloud.
- (k) The image of the planet ill-defined.
- (l) The sky was not very clear, which may have caused the observation to be a little late.
- (m) The recorded time is probably rather soon, owing to the diffused light from the planet.
- (n) Very good definition.
- (o) The planet was very tremulous.
- (p) The satellite became suddenly visible, and at first increased rapidly in brightness; it attained its maximum brilliancy about 3^m 41^s after the recorded time.
- (q) The images were much diffused, the definition being bad.
- (r) Tremulous.
- (s) The observation not satisfactory; *Jupiter* very tremulous.

The initials W C, E, C, L, A D, J, and G, are those of Mr. Christie, Mr. Ellis, Mr. Criswick, Mr. Lynn, Mr. Downing, Mr. Jenkins, and Mr. Goldney.